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AUTHOR Mood, Alexander M.
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ABSTRACT

The collection and analysis of data concerning teacher effectiveness will continue to be of very limited use to teachers and administrators until our models of the educational process become much more sophisticated. Teacher performance indicators appear more relevant for judging teacher effectiveness than certification, education, and experience. Teacher effects may well be seriously underestimated if achievement data are first calibrated for student socioeconomic status, as the present rudimentary state of our quantitative models does not permit us to disentangle the effects of home, school, and peers on students' achievement. Although many investigators believe that teachers may be the most important factor in educational achievement for most children, that belief rests largely on judgment and does not give us any clue as to how it operates. Without that, it is not of much use for policy formulation or administrative practice. We absolutely must pin down the connections between the inputs and the outputs of education; without that kind of theoretical structure we can flounder indefinitely in our efforts to improve the process. (Author/JM)

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DO TEACHERS MAKE A DIFFERENCE?

Alexander M. Mood

This volume brings together some of the current outstanding analytical work concerned with appraising teacher effectiveness. Besides several original papers there is an extensive survey by James Guthrie, George Kleindorfer, Henry Levin, and Robert Stout of a number of recent illuminating quantitative studies. My overview of the conference that generated these papers will not abstract them but will attempt to present a fair answer to the two major questions to which it was directed. On the one hand it was intended to bring us up to date on what we can say with some assurance about the effectiveness of teachers. Its second objective was to give some direction as to what we might do next to improve our understanding of how teachers are effective and, by implication, to help teachers increase their effectiveness.

The we in these sentences actually refers only to myself, but I hope it is not seriously unrepresentative of us participants in the conference, or most of us educators or sometimes even us citizens of the United States. There is a third and final section of the overview which presents some thoughts about how trends of the times may change teaching; these are purely personal speculations which have no connection with the conference or the views expressed by the participants.

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What Does Analysis of Data Tell Us?

Many of the important analyses use data gathered by the U. S. Office of Education in its 1965 Equality of Educational Opportunity Survey of the U. S. public schools. It has often been called the Coleman Survey after James Coleman who had the major responsibility for carrying it out but in deference to his desire that the contributions of others not be slighted we shall refer to it simply as the EEO Survey. The Survey went farther than any previous one had in attempting to gather information about the whole complex of factors affecting childrens'

education; in addition to data about childrens' achievement there was information about their socioeconomic status as well as about some of the education-related attributes of their parents; besides school and teacher data there was information about communities in which the schools were located.

With respect to teachers there was conventional data about teachers' age, sex, race, socioeconomic status, education, experience, certification, salary and professional activity. There were also items which attempted to get some indication of the quality of the institution where the teacher was trained, of teacher attitudes toward minority groups, and of teacher morale. In the analysis of the data not any of these indicators turned out to be a particularly powerful discriminator for predicting student achievement but most investigators find that socio-economic status, education, experience and salary have statistically significant correlations with achievement in the expected direction. The item that seems to discriminate best is the teacher's score on a brief self-administered test of verbal facility. The test consists of a list of thirty sentences--each having one word missing and each having a list of five words from which one was to be selected as the most logical selection for the missing word. Hanushek, Levin, and Michelson all find it to be the most useful explanatory variable. Referring, for example, to Hanushek's Table 1 we observe that its elasticity is four to six times as large as that of teacher experience. That is, the regression equation connecting these two variables to achievement indicates that a percentage increase in teacher verbal score is far more effective than an equivalent percentage increase in experience in increasing student achievement. This particular finding would not be of great practical interest if it should turn out that verbal score was a far more expensive commodity than experience. Levin's paper takes the next step and prices these things out to show that verbal score is not especially expensive. This kind of cost analysis is something that everyone agrees must be done but rarely does one ever do it. Let us hope that Levin's example will encourage all of us to pay more attention to the important task of relating research results to the real world.

Having raised that issue we must point out that not much attention can be paid at present to the size of coefficients in regression equations or structural equations. A time will come when they will be extremely valuable but the state of model development in education is so primitive today that we do not even have a satisfactory set of variables. Thus, verbal ability is a proxy for a number of important attributes of a complicated entity called a teacher. If we went about increasing the verbal ability of teachers, the increase that might result in student achievement would be far less than what would be calculated by using the equation that relates it to achievement. The reason is that a specific increase in verbal ability would probably not be accompanied by a corresponding increase in all the other attributes that verbal ability is serving as a proxy for.

This point might be a little clearer if we think of the variable "reading matter in the home," which has a significant coefficient in any regression equation relating achievement to home background. A heavily weighted item in that variable is "presence of a dictionary in the home." If one seriously believed the regression coefficient he would rush out and buy a dictionary for every home that did not have one; he could thereby expect to bring about a huge nationwide increase in achievement at trivial cost. Of course the increase would not materialize because the dictionary is actually a proxy for a number of other educationally efficacious properties of the home which would not magically appear with the addition of a dictionary. A great deal of fundamental development work will have to be done before we can have any confidence that we have a reasonably complete set of variables suitable for the educational model; only then can we begin to believe the calculations based on coefficients in equations and begin to make the policy recommendations implied by them. Until our models become a great deal more sophisticated they will be of very limited use to policy-makers and administrators. Michelson's paper has an excellent discussion of these problems.

Both Hanushek and Levin point out the substantial implications for personnel policy that follow from the fact that a simple performance indicator (verbal ability) seems to be so superior for judging the

quality of a teacher to the indicators commonly used by educational administration (certification, experience, amount of graduate work and advance degrees); certainly a very serious question is raised about the incentive system in education if salary (which is based upon the common indicators) discriminates achievement scores weakly. In any case, the conference participants agreed that the available data convince them that teacher performance indicators are more relevant for judging teacher effectiveness than certification, education, and experience. This conclusion should surprise no one; it has long been one of the basic tenets of personnel administration in the commercial world; there, rewards are based almost entirely on results and almost not at all on credentials (beginners excepted).

Does salary discriminate weakly? We think so despite the fact that when one relates student achievement scores to teacher salary directly in a simple regression they are usually found to be closely associated; that is, salary seems to discriminate rather well. If one adjusts achievement scores to account for the socioeconomic status of the children, then there is almost no relation between the adjusted scores and salary. We are at a dilema which will plague us throughout our examination of the statistical evidence. The evidence is much too rudimentary to give us definite answers. We are just barely beginning to construct a quantitative framework for getting at these questions. It will be quite a long time before we get reliable quantitative guidance from it. All we can say about this matter at the present time is the following: children from well-to-do, well-educated families tend to get higher achievement scores; children having higher salaried teachers tend to get higher achievement scores; higher salaried teachers tend to be found in well-to-do school districts; there is insufficient evidence to determine how much of the higher achievement should be attributed to the home and how much to the teachers.

These same observations apply as well to other teacher characteristics. Thus, with respect to experience, experienced teachers develop seniority and hence some choice about where they teach; they tend to gravitate to the comfortable suburbs; hence one finds good association

between student achievement and teacher experience. How much of the higher achievement should be attributed to teacher experience? The present rudimentary state of our knowledge permits us to make no reasonable estimate of it.

This basic difficulty with the existing quantitative knowledge of the educational process is consistently brought out by every investigator. Student achievement correlates with almost any school attribute and it is no trick to build up a set of attributes which will generate a sizable correlation. The same can be done with home attributes or with community attributes. When one tries to control on one set in order to assess the effect of another set he finds that he has over-controlled and the sought effect is very small--vastly smaller than it would have been without the control. Thus the original report on the EEO Survey regularly found extremely small school effects of any kind after adjustment for students' socioeconomic status had been made. Several of the studies surveyed in Guthrie's paper exhibit the same phenomenon; sometimes school effects are found to be statistically significant even after adjustment for student socioeconomic status but they are nevertheless quite small and the significance is more a result of large sample size than of real magnitude. We may conclude as a general result of these findings that <u>teacher effects will be seriously underestimated if achievement data are first calibrated for student socioeconomic status</u>. We cannot actually demonstrate the truth of that statement because we are not able to estimate teacher effects in isolation but most investigators are convinced the statement is true.

Mayeske's paper deals with these difficulties in a quantitative way by focusing on reductions in variance rather than on regression coefficients. This was the primary analytical technique used in the original analysis of the EEO Survey data (Coleman, et al 1966), but in Mayeske's paper it has meanwhile become a considerably more powerful tool and in addition it has been applied with a great deal more care and sophistication than was possible in the original analysis (which was pushed by various delays in getting the data too close to the Congressional deadline for submitting the report).

For the benefit of those not familiar with statistical methods I shall take a paragraph to indicate roughly what Mayeske's analysis does. Different ninth grade children have different achievement scores for many reasons: differing abilities, differing parents' education and interest in schooling, differing abilities of their teachers, differing interests themselves, how they felt on the day of the test, and so on. Statisticians calculate an index of the extent to which the scores jump around; it is called the variance (and calculated by subtracting the average score from each score, squaring those differences, adding the squares together and dividing by the number of scores; that is, it is the average of the squares of the differences). If the scores are first adjusted for parents' education, then the variance of the resulting adjusted scores will be smaller; let us suppose for illustration that the adjustment reduces the original variance by 25%. Now let us consider a second adjustment using, say, teachers' verbal ability instead of parents' education and suppose that that adjustment reduces the original variance by 20%. Finally let us adjust the scores for both parents' education and for teachers' verbal ability and suppose, for purposes of illustration, that the double adjustment reduces the original variance by 35%. The results of this set of calculations are described thus: of the combined reduction in variance of 35%, 10% is uniquely associated with teachers' verbal ability (because that, in the combined adjustment, reduced variance 10% over the 25% achieved by the parents' education adjustment alone); 15% is uniquely associated with parents' education (because that, in the combined adjustment, reduced variance 15% over the 20% achieved by the teachers' verbal ability adjustment alone); and the remaining 10% (35% minus the two unique parts) is common to both parents' education and teachers' verbal score. There is no way to tell whether that common 10% should be attributed to parents or to teachers or whether it should be divided between them somehow.

The numbers in the above paragraph were purely hypothetical. Some actual numbers may be found in Mayeske's Table 1 which illustrates especially well the extraordinary amount of overlap between home and school attributes. The table refers to two sets of variables (instead of

just two variables as in the above paragraph); one set called B refers to the students' background and the other set S refers to attributes of the school. The table shows that of the total reduction in variance of a set of scores (this table refers to the reduction, not the whole variance, so the total reduction is called 100%) achieved by the B and S sets in combination, 94% of the reduction can be accomplished by the B set alone and 88% of the reduction can be accomplished by the S set alone. The overlap (or commonality) of the two sets is 82% which is quite a large number relative to the two unique parts; it indicates that the B set is a very poor set of variables for getting specifically at background effects and that the S set is a very poor set of variables for getting specifically at school effects. If the scores are adjusted first by the B set, 82% of the 88% that the S set could have removed by itself will have been removed by the adjustment and only 6% will remain to be identified with the S set. This and the other results presented by Mayeske make it clear to all investigators that the present rudimentary state of our quantitative models does not permit us to disentangle the effects of home, school, and peers on students' achievement.

The commonality model has the advantage over the linear equation models of not encouraging people to substitute numbers into equations and then believing the resulting calculations. The size of commonalities supplies us a good criterion for the degree of primitiveness of our models; the smaller the commonalities get, the more confidence we can have that our variables are actually measuring the things we are trying to measure. When we can get those commonalities down to perhaps half their present size or smaller, we can joyfully abandon the commonality model and move to the much more illuminating regression models and still more illuminating structural models that have been described in the papers of Michelson and Levin.

Can commonalities be substantially reduced? Can home, school, and peer effects be disentangled? Probably not entirely but surely to a considerable degree. The problem at present is that our measures are far too crude. We are using simple items that are really only proxies

for the items we should be measuring. Hanushek points out clearly in his Ph.D. dissertation that many of the items that go into socioeconomic status are simply evidences of income. Family income does not teach children. We have to get at what parents do that helps their children learn; we shall doubtless find that many parents without much income do those things too and that their children consequently tend to do well at school. It is also fairly obvious that we have extremely crude measures of teacher quality and I shall explore that consideration further in the next section. The simple proxy devices have the unfortunate property that, for example, they can represent community or parent or teacher attributes even though they were meant to measure student attributes. It is no wonder that we are having great difficulty getting any real grip on teacher effect.

We can only make the not very useful observation that <u>at the present moment we cannot make any sort of meaningful quantitative estimate of the effect of teachers on student achievement</u>. Many investigators believe that teachers may be the most important factor in educational achievement for most children and are at worst second only to parents. That belief rests largely on judgment and it may well be true; unfortunately it does not give us any clue as to how it operates and without that it is not of much use to policy formulation or administrative practice.

What Must We Find Out?

If, as has been said of investigations in the physical sciences, the mark of a successful experiment is the number of fundamental questions it raises, then the EEO Survey was quite a success. It was an attempt to obtain some sort of comprehensive quantitative understanding of the whole range of basic factors that enter into educational achievement. We did not get much fundamental understanding out of it but we did get some real sharpening of fundamental questions. Now we can see that the measuring instruments were altogether too crude (except for the tests which measured academic achievement). They were crude because they did

not begin to cover all the important facets of such complex factors as parents, teachers, and peers; not only were they impossibly brief, they relied too much on easy to get but not very discriminating proxies. The result is that we have only the barest beginning of quantitative comprehension.

So we must try again and keep trying and improving and refining. We absolutely must pin down the connections between the inputs and the outputs of education; without that kind of theoretical structure we can flounder indefinitely in our efforts to improve the process.

One set of inputs to the process consists of youths with various levels of intellectual and behavioral competence. Another set of inputs consists of teachers with various competences. There are other inputs. The outputs are youths with higher levels of competence (and incidentally teachers with greater experience). Very broadly speaking, the competences which education is intended to develop in students are of two kinds. There are skills and knowledge in such areas as:

Communications,
Mathematics and Computer Languages,
Natural Sciences,
Social Sciences,
Humanities, and
Arts;

and there are matters of personal development such as:

Social Competence,
Responsibility,
Self-Confidence,
Creativeness,
Ethics, and
Carefully Thought Out Personal Goals.

We have reasonably good instruments for measuring skills and knowledge; we have essentially no capability at all when it comes to measuring the aspects of personal development. Merely to quantify the

outputs, therefore, we must carry out a substantial instrument development program which will be largely in the realms of psychology and belief rather than in the conventional academic realm. Only then can we begin to explore how these personal development outputs change as teacher and other inputs change in the manner that the papers included in this volume are beginning to do with respect to academic outputs.

I have written elsewhere (in a paper included in the bibliography) of how a comprehensive analytical model can be developed which will unify explorations of this kind and form a basis on which can be built a verifiable body of knowledge about the operation of the educational system. A very similar model is presented in the first part of Hanushek's paper; more sophisticated structural models are presented in Michelson's and Levin's papers. This kind of theoretical knowledge is essential to formulation of effective educational policy and to effective management of school systems. We see in Levin's paper an excellent illustration of the kind of policy guidance that could flow in quantity from a valid quantitative model of the system.

The major inputs to the model besides youths and teachers are parental inputs, peer inputs, community inputs, inputs of the larger society, school administration, curriculum, and school facilities. Since we are primarily concerned at this conference with teachers, it may be worthwhile to elaborate that particular input in order to see how far we have yet to go before we can have any confidence that we are able to assess teacher-pupil interactions. I am not speaking of understanding the interactions; I am speaking merely of assessing their effects in terms of educational accomplishment. That is, as several investigators of the EEO Survey data have found, the verbal ability of the teacher is definitely associated with pupil achievement. We do not need to go into the question of how the ability operates to increase achievement; one can make more or less reasonable speculations about it but those are not essential to the construction of the model or to policy utilization of the model. It is sufficient that we can measure achievement, that we can measure verbal ability, that we can estimate the degree of their association, that we can demonstrate it by experiment,

and that any objective investigator would come to essentially the same conclusions if he should attempt to duplicate the analysis and the experiment.

We must develop a comprehensive model for this scientific purpose itself as well as for policy and management purposes. Experimental results cannot be duplicated without it. Education is such a complicated endeavor that it is really impossible to duplicate experiments faithfully; for one thing teachers and pupils cannot be duplicated. Experimenters can only do the best they can to carry out approximate duplication; then they must adjust their results to take account of the deviations of experimental conditions from true duplication. The model enables such adjustments to be made. Until we have one, there will be no operationally effective science of educational systems because there cannot be a science without a means for determining what is and what is not duplicatable.

What must be measured about teachers? Every attribute that is significant to teaching effectiveness or, as Robert Gagné says, is significant to the ability of teachers to facilitate learning. Many of us are convinced that verbal ability (accurate understanding of the meaning of words) is one. There may be fifty others--more or less. The sole source of that number is the fact that I have taken a little time to try to list teacher attributes that might conceivably be as important to learning as understanding the meaning of words. The list follows, arbitrarily classified under five headings.

Dedication to the Educability of all Children

Conscientiousness
Humaneness
Patience
Sensitivity
Optimism
Tolerance
Responsibility
Fairness

Inclination to praise success

Inclination to react to mistakes with reassurance

Ability to Communicate

Verbal ability

Fluency

Lucidity (in the vocabulary of the students)

Poise

Sincerity

Tact

Expressiveness

Good humor

Adaptability

Tendency to use illustrations and examples

Ability to Motivate

Empathy

Enthusiasm

Helpfulness

Resoluteness

Persuasiveness

Friendliness

Earnestness

Generosity

Open-Mindedness

Charm

Ability to Organize and Manage a Class

Leadership

Confidence

Maturity

Common sense

Intellectual honesty

Responsiveness

Realism

Integrity

Equanimity

Attentiveness

Capacity to appraise and evaluate

Ability to Create Learning Experiences

Capacity to diagnose and analyze learning difficulties

Familiarity with teaching methods

Tendency to experiment

Originality

Resourcefulness

Curiosity

Artistic ability (particularly to draw illuminating pictures and diagrams)

Imaginativeness

Ability to dramatize

There is a sixth important classification having to do with the teacher's knowledge of a chosen field in which to teach but we shall omit consideration of that because instruments for measuring those attributes already have a long history of development and are in a reasonably satisfactory state.

The listed attributes doubtless overlap to a considerable degree; the projected model will require that the overlaps be determined and that the list be pruned down in order to eliminate any near duplicates. That is necessary to prevent collinearities from injecting instability into the model. It will require a large investigation. I am reasonably certain that we shall get essentially nowhere by trying to make do with combinations of existing personality tests such as, for example, the Minnesota Multiphasic. We shall simply have to sit down and do the slow laborious work of devising a list of a dozen or so questionnaire (or interview) items for each and every one of these teacher attributes--items thoughtfully and narrowly directed specifically to the attribute. Then a large sample of data must be obtained from teachers and factor analyzed by the same procedures that Mayeske and his colleagues used in

developing their indices for the EEO Survey data. While this kind of sweeping attack on the dimensions of teacher effectiveness will not guarantee that every dimension will be uncovered, perhaps most investigators will feel reasonably confident that no important one has been omitted altogether; these imprecise attributes do overlap and it is likely that any others that might be measured will overlap these to some extent and hence will be represented by these to that extent.

Once this analysis has been carried out then construction of the next stage of the model can begin. That stage will resemble the relations we see in the papers of Hanushek, Levin, and Michelson which connect student achievement to teacher characteristics. The difference will be that something approaching the full force of teacher effect will be represented. (My personal belief is that it has been dreadfully underrepresented in all studies that have been carried out thus far; that is, that there are many important dimensions of teacher quality that have insignificant overlap with the dimensions we have been accustomed to measure.) Full representation will give us real potential for assessing the whole teacher effect, for better differentiating home and school effects, and for determining the relative importance of the various teacher attributes. This last information will give crucial policy guidance for teacher education and for counseling those who are considering preparing for teaching as a profession.

Another very important matter discussed by Michelson can then be explored to the probable great benefit of school administration. That has to do with the variety of students and the likelihood that different kinds of students will learn best with different kinds of teachers. Some teachers just naturally turn some kids off. Learning depends so strongly on teacher-student interactions that there must be considerable potential for improvement of the educational process by developing procedures for assigning students to teachers in a way that will enhance those interactions.

In order to make valid connections between student achievement and teacher characteristics it is essential that differential student achievement be associated with specific teachers (Hanushek and Michelson).

That is, the students must be measured at the beginning of the school year and again at the end of the school year. The analysis of teacher effects must use the gains in achievement levels--not the achievement levels themselves.

The quality of this proposed model development program will depend very much on our having instruments for measuring student achievement in personal development as well as for measuring academic achievement. Teacher attributes important for the former may well be somewhat different from those that are effective for the latter. It would be an inexcusable blunder to depreciate the qualities of those teachers who are doing an outstanding job of personal development of students.

There will apparently be some difficulty about associating personal development increments with specific teachers in secondary schools because students have several teachers. In the elementary grades where students normally have a single teacher the difficulty will not arise (as Hanushek observes). But even in secondary schools the difficulty may be more apparent than real. Every student is exposed to a set of teacher attributes (in the language of the model); in elementary schools that set for a particular student happens to correspond to a single teacher; in secondary schools the set for a particular student consists (to a first approximation) of the same attributes averaged over the teachers whose classes he attends. The main difference might be that the secondary student will be less subject to extreme values of an attribute and hence a larger sample of data will be necessary to determine how a specific student personal development outcome is associated with a given teacher attribute.

How May Teaching Change in the Future?

The purpose of an overview is not only to consolidate present knowledge but to use it to deduce plausible directions for the future. The preceding considerations naturally lead me to hope that the future of educational research includes a massive exploration of the connections between teacher-student interactions and learning. Considering the

kinds of interest that have developed at this conference perhaps it is not a wholly hopeless hope. Many able analysts are anxious to work on these problems. The work is an absolutely essential prerequisite to any substantial improvement of the educational process. Only the resources are lacking to get it under way and I am sure those at the conference who represented the U. S. Office of Education are working diligently on that matter.

One of the conference participants, Professor Doxey Wilkerson of Yeshiva, correctly pointed out toward the end of the conference that exactly nothing had been said or written about how teachers make a difference. The conference produced no suggestions for teachers or for teachers of teachers. I shall take it upon myself in the remainder of this overview to make a small gesture toward repairing that omission. It should be noted, though, that the conference was not much directed to that question despite its title; its primary aim was to discover the extent to which hard data could be used to estimate how much difference teachers do make.

In any case paucity of solid information about the relation of teaching to the learning process will naturally force many of us in education to look more attentively than we might otherwise to indirect information that may help us understand teaching and how it may develop over the next several years. We cannot escape indulging in a great deal of speculation in this endeavor but on the other hand it is essential that someone construct some conception of teaching of the future so that young persons planning to become teachers will have a glimpse of the various roles they might fill and so that those who are teaching teachers will have some clues as to how their activities may change. So I make no apology for generalizing as best I can about the implications of whatever signals I am able to detect.

Theater Arts

A number of clues point to the likelihood that acting, directing, dramatic writing, animation, and staging may become an essential part of teaching. A great many teachers may be doing nothing else; they

are the ones who would be teaching huge unseen classes via films and TV programs.

I realize that it is not fashionable just now to get excited about the wonders of technology and I agree with many of the criticisms of it. The idiot box will never replace the teacher. The impersonality of the box is a staggering liability in the age of increasing urbanization which puts increasing reliance on practiced social intercourse. The box cannot notice that it has lost the child; it cannot hear his questions; it could not answer them anyway. Worst of all it cannot bend even slightly to the child's desire that it deviate from its program. (Some programs have considerable built-in flexibility; I am referring to excursions outside that range of flexibility.) Nevertheless there is one thing it does exceedingly well and that is transmit information at great speed. A picture is worth a thousand words and furthermore it can be grasped in about the same amount of time as can one word. It is an undeniable fact of physics and physiology that nothing else can begin to approach colored pictures for transmitting large numbers of bits of information per second to the human brain. That fact has a large contribution to make to educational effectiveness. We cannot give it much time during the school day but while it is operating it can be a powerful tool.

The box can do other things. It can be an infinitely patient drill master. And despite its impersonality, we have all seen in good movies how accurately it can present deep human emotions and complicated human behavior with an indelibility that words could never match. These boxes will blossom in the hands of teachers skilled in using them and supplied with material created by teachers skilled in preparing them. So much for boxes.

You can lead a child to Chaucer but you can't make him think. (Sorry 'bout that.) Showmanship is not only for teachers who are creating fascinating educational materials. Showmanship is for all teachers. There was a time, now long past, when school may have been something of a relief to children burdened with arduous chores at home or on the farm.

Nowadays they mostly watch television at home. In comparison with that, school is usually a drag strictly from dullsville.

It will not cease being a drag until we start fighting fire with fire. A humdrum performance simply will not hold the attention of our children; they will switch to another channel--leaving education to drone on to the ether. Unfortunately, the marijuana channel seems to be sort of interesting.

Student Participation

It appears to me to be reasonable speculation that teachers of the future may make a large difference by fully including students in all aspects of carrying out the educational enterprise. This will require revolutionary changes in organization, schedules and curricula. At present, the organizational arrangement of teachers and pupils in a school is almost everywhere determined by the simple venerable concept of dividing the pupils about equally into as many groups as there are teachers and then placing each group in a room with one teacher.

It will not be easy to change because it is established by long tradition and is therefore buttressed by the expectations of teachers, children, and parents; by the existing administrative structure and hence the whole experience of school administrators; by the training of teachers; by the design of school buildings; by the pattern of all the tools available to teachers; by a salary structure that awards the best teacher the same wage as the poorest teacher with the same training and experience; and most of all, by the budget which unmistakably spells out the pupil-teacher ratio.

Nevertheless in recent years a number of ideas have been put forward for changing the traditional pattern; some of them have been given limited trials with considerable success. One is the team-teaching arrangement which puts two or more teachers in a classroom for certain special instructional purposes. Another contemplates putting layers of organizational structure into the teaching staff so that the more able teachers supervise the younger or less able teachers in various ways.

Another would add still more echelons to an organizational structure for teachers by including para-professionals and teachers' aides in the school staff. Another would attempt to introduce great variability into class size so that a better match might be made between intensity of instruction and the difficulty of curriculum material. Another would rotate teachers so that the best ones would teach the most difficult material. Another would use the better educated parents or retired persons or some of the older and brighter children as tutors for those children having special learning difficulties.

None of these ideas quite gets to the heart of full student participation; that requires the interweaving of teachers and pupils into a unified organization. The students must be integral elements of the organizational enterprise--not merely a group of outsiders that the organization deals with. To this end all children must regularly be assigned teaching roles. Even third or fourth grade children would spend a little time helping individual first or second grade children. As children move up through the grades, increasingly more of their time would be devoted to teaching and the size of the group taught would increase slowly.

One expected benefit of the rotation of all children through teaching roles would be enhancement of their understanding and hence identification with the goals of the school. It occurs now mainly in the interscholastic athletic programs where the staff and the students are in good agreement about the goals and therefore jointly pursue them in a productive spirit of collaboration.

Another benefit of the rotation through teaching roles would be acquisition of extensive experience in performing supervisory and subordinate roles with a wide variety of personality types. These are the roles that all students must learn well if they are to be prepared for an ever more highly organized adult society.

An additional benefit to be expected of the rotation through teacher-pupil roles is partial fulfillment of the requirement that schools provide a rich variety of social experience to assist the development of social skills. It is a critical defect of current school

organization that children get hour after hour, day after day, year after year, one utterly monotonous social experience in the classroom.

The teaching experience of students should surely increase rapport between teachers and students because students will discover what a difficult art teaching is; they may have better tolerance of the shortcomings of teachers and far better appreciation of good teaching.

Student teachers will rapidly learn the disaster of being unprepared. It is one thing to shrug off failure to do one's homework among one's peers but quite another thing in front of an expectant group of younger children. Mary Kohler's Youth Tutoring Youth Program has shown that this phenomenon gives schools a powerful new dimension of teaching; when a student has difficulty with an idea, give him the task of teaching it to a couple of younger children and he will pore over it mightily.

Pedagogy, educational psychology, and individual psychology would become a significant part of the elementary and secondary curriculum. The considerations here are that: (1) the student teaching must be as effective as possible, (2) education is more and more becoming lifelong as technology accelerates and much of it will necessarily take place on the job and in the home so that all of us will be continually teachers and learners, (3) recent realization of the tremendous importance of training and education during the first five years of a child's life implies that all students must be taught to lead their own children effectively through those first years, (4) recent realization that the primary cause of adult failure is not incompetence but possession of annoying personality traits and the prospect that understanding of psychology by oneself and one's peers at an early age may tend to minimize solidification of such traits. Most importantly, knowledge of pedagogy and educational psychology will enable students to understand the methods and tactics that the adult teachers are using in their teaching. They will then be able to exert real intellectual influence on the educational process; there will be opened up to them a whole spectrum of reactions to the system instead of just the two available

to them now (acceptance or rejection); they may even be able to force some modernization and relevance into the curriculum.

Sensitivity

A whole new conception is developing of what constitutes civilized behavior. It is a substantially lovelier and kinder concept than we have been accustomed to but it is somewhat difficult to recognize because it is usually advanced by nonestablishment young people whose behavior appears to be atrocious. It is not really atrocious but there are moments when they become outraged at what they consider to be uncivilized behavior. Those are the moments when the press puts the spotlight on them, as is perfectly natural for the press, because at those moments their behavior seems to be so inconsistent with what they are talking about. That's news. And perhaps the fact that it is news means that they may have something.

The main ingredient of the new standard of civilized behavior is the decree that psychological violence is as abhorrent as physical violence. The psychic scar is often more abominable than the scar of the lash because it keeps on hurting so long--sometimes for a lifetime. Insult, humiliation, sneer, arrogance, caste, intellectual superiority, and holier-than-thou have to go. When some of our young people experience psychological violence they react as if they had been clubbed on the head or shot in the leg; not surprisingly their reaction may be a doubled and redoubled dose of psychological violence--a dose large enough that it may have a chance to penetrate the insensitive skull of the perpetrator of the original violence.

Sensitive teachers certainly make a large difference to children. Such teachers never indulge in humiliation by design or by accident. There is no better way to keep a child ignorant than to humiliate him now and then. The humiliation rankles; every tiny facet of it demands the closest examination; try to expunge it from his mind as he may, it keeps creeping back in; obviously it cannot be displaced by such ego-insignificant trivia as the product of six and nine or the spelling of Mississippi.

We are beginning to learn how to carry out sensitivity training. It would be possible for every teacher to have it. Imagine what a difference teachers may make when all of them are as sensitive as our most sensitive teachers are now. It would be hard to exaggerate the amount of additional education that might accompany that state of affairs. It is not just that unintentional teacher-created roadblocks to learning might largely disappear. That would be a very small part of it. Much more important, teachers might be better able to recognize at once when communication is failing. They might be far more expert at diagnosing students' learning problems. A whole new sympathetic mental environment could do much to erase the remaining custodial, adversarial, incarcerational vestiges of the school system. That environment might in turn generate a new level of civilized behavior on the part of the students themselves. They might become more sensitive partly as a matter of instruction but also as a result of appreciating and imitating the living example set by the teachers they encounter. Insensitivity might tend to become socially unacceptable and later unthinkable.

Philosophy of Value

It is becoming common knowledge that there is not a single unique value system; that there is not a simple rule for determining whether an act is right or wrong; that there are endless shades of gray; that some acts can be right in some quite acceptable value systems and at the same time wrong in other quite acceptable value systems; that one's personal value system cannot be identical to any other because it depends upon one's own conscience which in turn depends upon his genetic and cultural heritage. How many children have been convinced that they are utterly worthless by parents and teachers who perfidiously claim to adhere to some ridiculously stringent moral system? How many children are driven to suicide each year by that lie?

Of course parents are far more guilty than teachers but teachers are not innocent; altogether too many of them pump their quota of hot air into these adult-inflating conspiracies apparently quite unaware

of the tremendous damage they may do to some children. Some misguided teachers actually appear to believe that these lies are good for children. They are not--by any stretch of the imagination. If children believe them, they are made miserable by their own behavior; if they do not believe them, they have become cynics and it is not easy to educate cynics.

The greatest benefit to developing value judgment could come from frequent thorough exploration of controversial issues. It is a most educational experience for students to hear respected authorities constructing an impenetrable case for one side of a question and another equally respected group of authorities constructing an equally impenetrable case for the other side. That is where the cultural action is. That is where society is trying to get out of some rut or other. That is how society exhibits its capacity to adapt to new conditions and to meet the future. Youths are going to live in the future. These controversies are often right in the middle of their interests. That is where relevance is. They need to understand how fragile the rational underpinnings of social institutions really are and how society actually goes about tearing them down or shoring them up.

It has been said that children are not sufficiently mature to explore such an adult matter, for example, as the recent argument between government officials who wanted to name the TV models that start fires and the captains of the electronics industry who did not want them named. There are arguments, good and bad, on both sides. The contention that kids cannot understand and make their own evaluations of these arguments is baloney. Not only do they have excellent intuition about justice and equity, they have a great deal of sophistication. That sophistication comes from TV itself where they daily see perfectly groomed, faultlessly attired corporate executive types continually spouting in dead seriousness the utterest drivel as they peddle their sponsors' products. That drivel often includes outright lies about the marvels that flow from such products as nicotine and deodorants. If one deliberately set out to devise an educational process which would most effectively expose the shallowest and shoddiest aspects of our society to

our children, he would be hard put to improve on TV as it exists today. At any rate it works; our kids know the score like no other generation of kids ever did. The United States is the greatest country in the world but there are important things wrong with it that many people believe could wreck it and our kids have a good impression of what those things are. The generation gap may save our lives; perhaps the nation's prospects would improve if the gap were even greater; possibly we owe a vote of thanks to the racists and predatory merchants and frightened super patriots who are industriously widening it.

But other people teach kids some of the unpleasant facts of life also. I talked recently with a bright thirteen year old high school girl who had learned that in order to get an A in her freshman Spanish course she would be smart to sign up for German under the same teacher (who happened to owe his job to the existence of a class in German); she is not working very hard on her Spanish. "To hell with it, I can get into college with good grades in my other courses." The engaging thing about that statement is the first part; up to now she has a spotless academic record but she is not going to shed any tears that a stupid happenstance will probably bring her a C in Spanish. Good value judgment. The second part of her statement is not completely satisfying, is it? Reflects a little too much certainty that college is the only possible option, doesn't it?

Surely there is an acceptable value system that does not include the axiom that all able people must go to college. There are a great many careers for which college is largely a waste of time; progress along those careers might be more satisfactory if a person plunged right into them from high school and educated himself along the way in small increments as his progress required. Most business careers are in this category; so are many social service and public service careers; so are most artistic careers. Society needs able people in these careers and it is not necessary to first dump them all into the sieve for graduate schools. Let's pass over the waste of public resources spent on higher education of those for whom it does very little; maybe we are rich enough to afford it; I doubt that we are but let's pass over it. It is

altogether likely that many students who do go to college cannot themselves afford the waste of four years and of the money that supports them.

We educators and we parents could be making a large blunder by convincing them that they are doomed to second class status if they do not incur that waste. We would be committing great numbers of blunders each year by assuring those who cannot possibly go to college that the United States has only second class status for them. We could be short changing ourselves monstrously by rating scholastic aptitude above imagination and artistic talent, and thus diverting magnificent talents away from their natural insightful creations into minor intellectual endeavors. We could be building dangerous tensions into our social fabric by labeling large numbers of people as dumb and labeling large numbers of important or necessary occupations as suitable for dumb people.

What an immense difference teachers could make by illuminating for young people the great variety of perfectly legitimate value systems! Reassurance could be brought to those who see quite clearly that their own natures are wholly incompatible with the traditional formula for success. (Whatever rung of the ladder you happen to be on, scramble frantically for the next one; when you get there scramble frantically for the next one; don't worry about where the ladder leads; it leads to the top.) The decision not to climb the ladder could be regarded as having great wisdom. Encouragement could be offered to those who are beginning halting efforts to explore other life styles and novel dimensions of personal satisfaction. Resoluteness could be imparted to those who are determined to succeed as whole human beings rather than as generators of income.

In conclusion let me repeat that I have been sifting clues and giving you my best judgment as to how teaching may make a difference--a big difference--in the future. I have been listening to young people speak and reading what they write. To the best of my ability to interpret what they are saying, I have tried to tell you where they may be taking this world. Few of us who are teachers seem to be paying enough attention to them. They are our customers and as such they are becoming

more and more dissatisfied with our services; we are in trouble; the longer we stumble around in ignorance of how to do what we are trying to do the more miserable that trouble is going to make our lives.

Do teachers make a difference? Of course they do. Obviously Herbert Kohl made quite a large difference to 36 hapless children who suddenly had a fabulous stroke of luck when he walked into their classroom. There are dedicated teachers who are determined that every last child in the class will learn the material expected of him. There are uninspired teachers who are getting something across but not much. There are loving teachers who bring lifesaving affection to miserable children of acrimonious families. There are unfeeling teachers who injure children by publicly humiliating them. There are brilliant teachers who can convert a child's interest in almost anything into hard work on the very thing he needs most. There are idiots who destroy childrens' self-confidence by convincing them that they do everything wrong. There are saints who somehow civilize little demons that everyone else has given up on as hopeless. We could go on and on with statements of this kind; the point is that some teachers make a huge difference; some teachers make a large or a medium or a small difference; a few teachers may even do more harm than good. But all teachers desire to make a big difference; they would find tremendous satisfaction in making a big difference; they could make a big difference if we would tell them how; we could if we would put some real effort into it.

AMM/jg
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BIBLIOGRAPHY

Avorn, Jerry, Up Against the Ivy Wall, Atheneum, N. Y. 1968.

Bowles, S. S., and H. M. Levin, "The Determinants of Scholastic Achievement," Journal of Human Resources, Vol. 3, pp. 3-24, 1968.

Carmichael, S. and C. V. Hamilton, Black Power, Vintage, N. Y. 1967.

Clark, Kenneth, Dark Ghetto, Harper and Row, N. Y. 1965.

Cleaver, Eldridge, Soul on Ice, Dell, N. Y. 1968.

Coleman, James S., The Adolescent Society, Free Press, Glencoe, 1961.

Coleman, J. S., E. Q. Campbell, et al, Equality of Educational Opportunity, U. S. Office of Education, GPO No. FS 5.238:38001, Washington, D. C. 1966.

Conot, Robert, Rivers of Blood, Years of Darkness, Bantam, N. Y. 1967.

Cottle, Thomas, "Young, Creative and Trapped," Change Magazine, Vol. 2, pp. 20-31, 1970.

Goodman, Paul, Growing up Absurd, Random House, N. Y. 1960.

Hanushek, Erik, The Education of Negroes and Whites, Unpublished Ph.D. Dissertation, Massachusetts Institute of Technology, 1968.

Herndon, James, The Way It Spozed To Be, Simon and Schuster, N. Y. 1968.

Hoffman, Abbie, Revolution for the Hell of It, Dial, N. Y. 1968.

Hoffman, N. von, We Are the People our Parents Warned us Against, Quadrangle Books, Chicago, 1968.

Holt, John, How Children Learn, Pitman, N. Y. 1967.

Jencks, C., and D. Riesman, The Academic Revolution, Doubleday, N. Y. 1968.

Kershaw, J. A., and R. N. McKean, Systems Analysis of Education, RM-2473, The RAND Corporation, Santa Monica, California 1959.

Kohl, Herbert, 36 Children, New American Library, N. Y. 1967.

Kohl, Herbert, The Open Classroom, New York Review, N. Y. 1970.

Kunen, James, The Strawberry Statement, Random House, N. Y. 1968.

Leonard, George, Education and Ecstasy, Delacorte Press, N. Y. 1969.

Mayeske, George et al, A Study of Our Nations Schools, U. S. Office of Education, 1970.

Michael, Donald, The Next Generation, Random House, N. Y. 1965.

Mood, A. M., "Macro-Analysis of the American Educational System," Operations Research, Vol. 17, pp. 770-784, 1969.

National Commission on Resources for Youth, Youth Tutoring Youth - It Worked, 39 West 44th, New York, 10036, 1968.

Portman, C. and C. Weingartner, Teaching as a Subversive Activity, Delacorte, N. Y. 1969.

Riesman, D., N. Glazer, and R. Denney, The Lonely Crowd, Doubleday, N. Y. 1953.

Schwab, Joseph, College Curriculum and Student Protest, University of Chicago Press, 1969.

Simmons, J. L., and B. Winograd, It's Happening, Marc-Laird Publications, Santa Barbara, California 1966.

Skolnik, J. H., The Politics of Protest, Simon and Schuster, N. Y. 1969.

Wolf, Leonard, Voices from the Love Generation, Little, Brown and Co., Boston, 1968.